



Ionization Profile Monitor Project

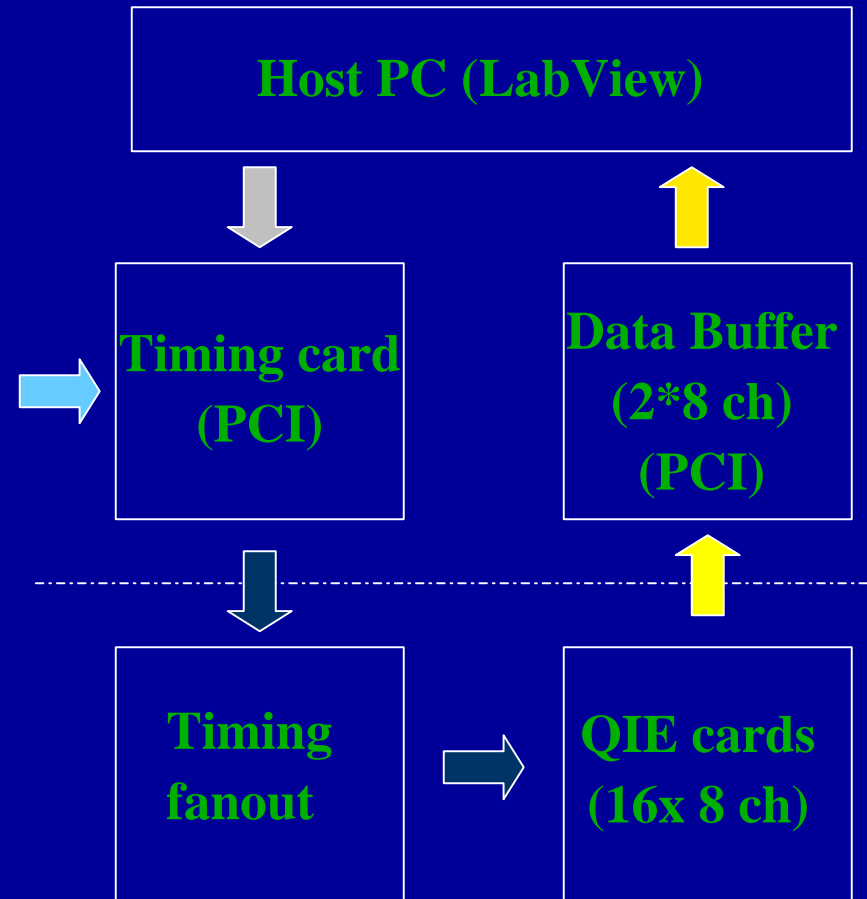
Current Status of IPM Buffer Board

(Project Update)

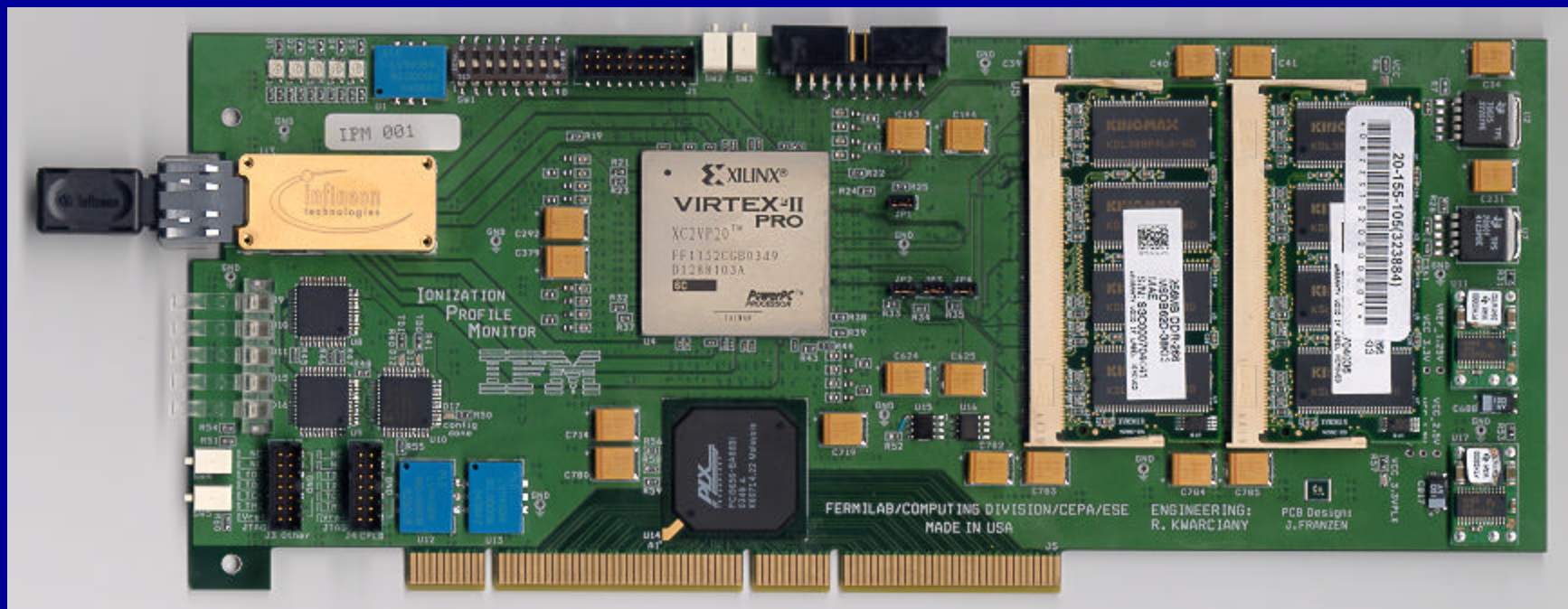
30 November 2004

DAQ system

- CMS-QIE front end in tunnel
- Serial data uplink on optical fiber
- Receiver and data buffer in upstairs PC
- Timing + clock + QIE settings supplied from PC thru cat-5E cable



IPM Buffer Board



Timing card

- Produces the 15MHz (2/7 RF) FE clock
- Decodes and transmits beamsync clock (p & pbar) injection events
- Transmits QIE settings
- Separate version of card will decode TCLK/MDAT

design & photos: T. Fitzpatrick



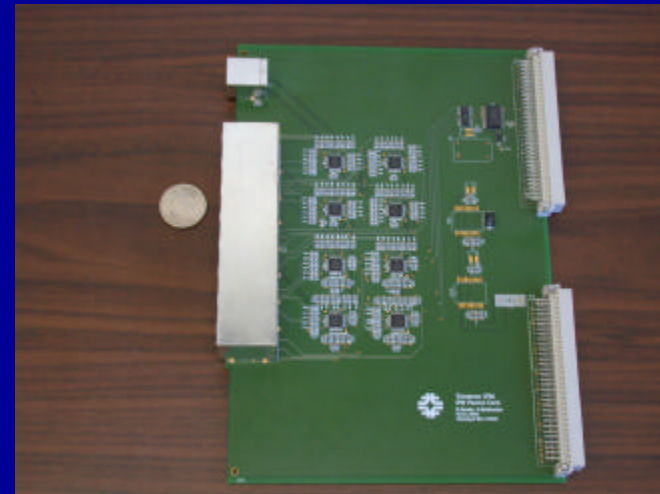
Front end card

- 8 channels (CMS QIE) per board
- Data is serialized by CERN GOL ASIC (rad hard) and sent thru fiber
- Timing fanout board cleans up and distributes clock and timing signals

design & photos: K. Bowie



QIE card

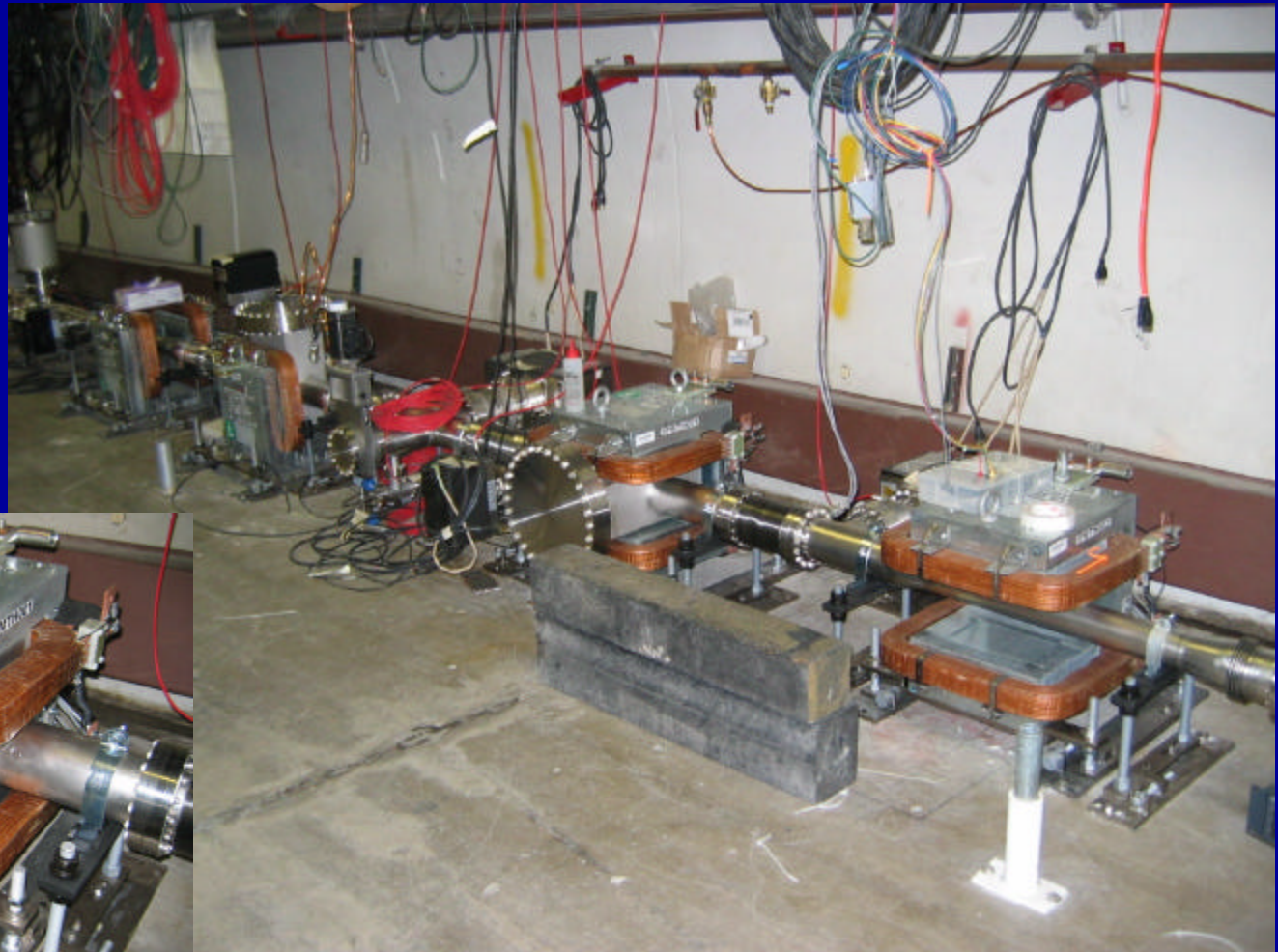
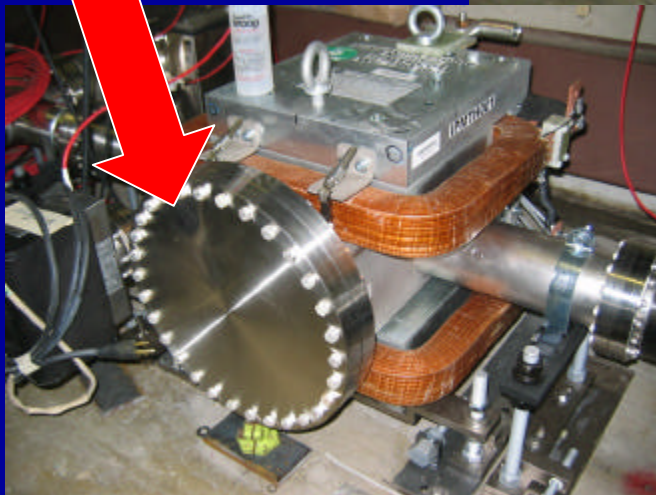


timing fanout

Tunnel installation

Magnets, stands,
vacuum chambers,
pumps, cables,
plumbing in place!

Detector goes here!



Current Status of IPM Buffer Module Project

- Five boards fully assembled and tested (production total).
- Firmware progress steady. Basic functions are implemented and debugging nearly complete. Triggering, and conversion functions still need to be added.
- Working software applications exist for IPM buffer diagnostics, and teststand readout and decode.

Work in Progress

- Currently working on fiber link problems. Data has been successfully transferred between the QIE board and the buffer module, but there are link errors and loss of lock.
- Trying to determine if problem lies at transmitter or receiver. ESE is modifying another module to allow independent debugging of receiver and transmitter.

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